Providing Effective Feedback

Teacher of the year award

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1. Background and reasons why I adopted this approach

It is widely accepted that feedback is a very important step in the learning process (see for example [1,2]), however a persistent theme in the National Student Survey is the complaint from students about feedback, or rather the lack of it. Often students feel that they do not get enough or adequate feedback to their assessments or that the feedback was not helpful [3]. In informal discussions with students it became clear to me that the common form of feedback, i.e. usually a written comment on the assessment, might not be perceived as particularly helpful. Students want to know precisely where they went wrong (descriptive feedback) and how to improve their performance in the future (prescriptive feedback). I therefore decided to address this issue and to provide feedback in different and hopefully more meaningful formats, as outlined below.

2. My approaches to effective feedback

a) Audio feedback

To give students a more comprehensive and personalized feedback I use verbal feedback for essays and final year project work. I utilize the 'Audio Memos' application on an iPod Touch 4G or an iPad [4], which allows for very easy, one-touch button voice recording. In my recordings I address the student directly, e.g. 'Hello John, here is some feedback to your essay on microbial resistance'. I go through the assessment and discuss specific aspects of

the work, e.g. 'the first part of the question you answered very well and your illustration looks nice, but the structure of your answer was not very clear'. At the end I give a summary and additional advice on how to make improvements in future. I believe it is very important to end the recording on a positive note and hence I try to give additional encouragement, e.g. '……if you take these comments on board, I am convinced that you will perform very well in future assessments'.

This approach also enables me to give additional advice, if it is apparent that the student has non-academic problems, eg. exam anxiety, dyslexia etc. In such a case I suggest that the student consults appropriate University services, eg. Student Support Services or Student Learning Advisory Services.

The recording is then saved and emailed directly to the individual student – the app has a user-friendly interface for directly attaching recordings to an email. On average these recordings are about 3 - 5 minutes in length, equivalent to 3 – 5 MB. Although producing a recording with meaningful feedback is slightly more time-consuming than just a quick written note on the assessment, I feel that it gives more extensive and helpful feedback to the students. Discussions with students indicated that it is the personal 'touch' of the recording and the addressing of individual problems that they value the most. Students are very enthusiastic and find this approach 'far more helpful than just a written comment'.

b) Video feedback

For some assessment types, especially numerical problem solving questions, it would be good to give the student visual feedback. I therefore explored the use of screen-recording software to simultaneously record voice together with a screen display of the model answers.

My initial attempts to give video feedback with BB Flashback Express software [5], installed on a Windows 7 desktop PC with webcam, external microphone and a digital input device (graphic tablet) were useful [6], however, I encountered several practical issues with this approach. I therefore looked for alternatives and found that the iPad app 'Educreations' [7] was ideal for my purposes. It is a free application for making screencasts, similar to an interactive whiteboard. As with audio recordings, I start the video feedback by addressing the student directly. I then show the student, where they went wrong by going step-by-step

through the respective model answers (for an example see [8]).

When the recording is completed, it is uploaded to the 'Educreations' server for which I hold a free account. I then receive the link to the recording, which is shared with the student via email. Only a link to the video is emailed and not the entire file, which puts far less strain on the students' email inboxes. The recordings can be watched on any computer, smart phone or tablet and are available indefinitely. Only people with the link can watch the feedback video, thus avoiding any privacy issues.

To give meaningful feedback to large cohorts of students I provide videos with step-by-step model answers for each assessment (formative and summative). I produce the feedback videos for each problem/question in 'Educreations' (for an example see [9]), the recordings are uploaded to the Educreations server and the links are shared with the students via email, Moodle and Facebook. With this approach I can generate meaningful feedback to large cohorts of students. I can also prepare the feedback videos in advance, which then can be published immediately after the assessment.

c) Individualized feedback to large cohorts of students

For many students effective and timely feedback is important for their learning, hence it would be desirable to use this tool as often as possible, however, increasing class sizes make it difficult to mark and provide feedback frequently. I therefore searched for ways to give feedback to formative assessments for large classes on a weekly basis. I found Google Forms very useful to set up MCQs problem solving questions as weekly homework. The answers are automatically written into a Google spreadsheet and marked, using the Google script 'Flubaroo'; and individual marks, including the student's answer and correct answer are automatically emailed to the student. The email also includes links to video clips of the model answers, made with 'Educreations' (for example see [10]). With this approach I can frequently mark and feedback to large student cohorts. It also gives me an excellent overview of the attainment of individual students on a weekly basis, with the potential for early intervention: Students who struggle in these formative assessments will be invited to additional booster workshops. Interestingly, discussions with students indicated that they are not too concerned about receiving automatic grades/feedback, as long as they can see where they went wrong; and have the opportunity to review their learning thresholds. This result is in line with recent research on the use of automatic marking/feedback [11].

3. Students' perspective

Feedback from students demonstrated that they very much appreciate my efforts and enjoy my feedback. In 2011 I won the University Faculty teaching prize for my innovative feedback; Kent Student Union twice awarded me the prize for best feedback in 2011 and 2013. In 2012 I was nominated 'Best University of Kent teacher' by Kent Student Union. Here are some of the comments I have received:

"During my first two years in the university, you had provided me with several feedbacks that helped me to improve my academic performance. I will never forget the voice-feedback sent from your iPod, which encouraged me to believe in myself and successfully complete the most critical stage of my undergraduate studies, the foundation year."

"For going above and beyond his duty as a teacher. For always having a smile on his face and making kinetics interesting. Finally for his feedback and extra help!!"

"Amazing in teaching, feedback and explaining! Knows how to get that info through and gives you PERSONAL INDIVIDUAL feedback, not many do that so its highly appreciated."

"We have test and he worked hard to make a correction video for each student in our class."

"He always goes above and beyond the call of duty, with extra slides, feedback, online sessions and self-created videos and videos he has found online all posted onto Moodle. There is no way he cannot be classed as the best teacher in the school. Not only does he do this for the third years but for every class he teaches, he has made class eventful and memorable. He has made me feel like i am learning outside of class and allows me to feel like I am progressing gradually through the year."

4. Benefit for my teaching

Being able to produce meaningful individual or class feedback without too much effort has considerably changed the way I teach. My teaching has become more learner-centered and

less focussed on the mere transfer of knowledge. With the frequent feedback that I receive through the homework assessments I can better tailor my lectures to the needs of the students. My ultimate aim is to transform students from passive learners into active learners [12].

5. Reflections

The number of positive comments from students and the recognition I have received from the University of Kent and Kent Student Union make me believe that my approach to giving effective feedback has positively impacted on student learning.

I fully appreciate that additional assessments could lead to overloading students; however, the submission rate of the aforementioned voluntary weekly homework exercises (usually between 75 - 85 %) indicates that students like this kind of approach for their learning.

My feedback approaches can be adopted by other disciplines. As outlined above, audio feedback can be applied to essays, while videos work very well to feedback on problem solving questions. To share my approaches to effective feedback I run workshops on feedback and the use of technology for newly appointed faculty and GTAs as part of the University's PGCert programme in collaboration with the graduate School and the Unit for the Enhancement of Learning and Teaching at the University of Kent.

6. Future developments

In future years I am planning to use the concept of the 'flipped classroom' (for review see [13]), together with my feedback approaches. Students will be provided with relevant videos, either from common video platforms like YouTube or generated by me with 'Educreations' before a teaching session. Together with these resources students will also be given a formative assessment in the form of the aforementioned MCQ-approach with Google Forms and Flubaroo. The deadline for submission will be chosen so that I receive the results before the teaching. In the session itself I can then address common misconceptions that students struggle with, as evidenced by their submissions. This way I hope that my teaching becomes even more flexible and learner-centred.

7. References

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